



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/553,457

10/17/2005

Thomas Bohm

327\_106

6979

20874

7590

07/01/2009

MARJAMA MULDOON BLASIAK & SULLIVAN LLP  
250 SOUTH CLINTON STREET  
SUITE 300  
SYRACUSE, NY 13202

EXAMINER

KASTURE, DNYANESH G

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

07/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,457	<b>Applicant(s)</b> BOHM ET AL.	
	<b>Examiner</b> DNYANESH KASTURE	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 5, 2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (US Patent 3,520,176 A) and in view of Beyer et al (US Patent 5,944,049 A)

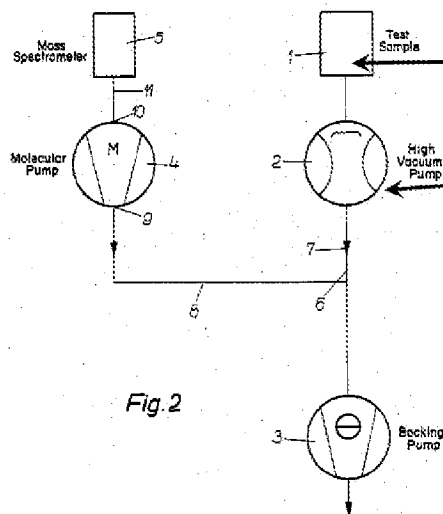


Figure 2 of Becker

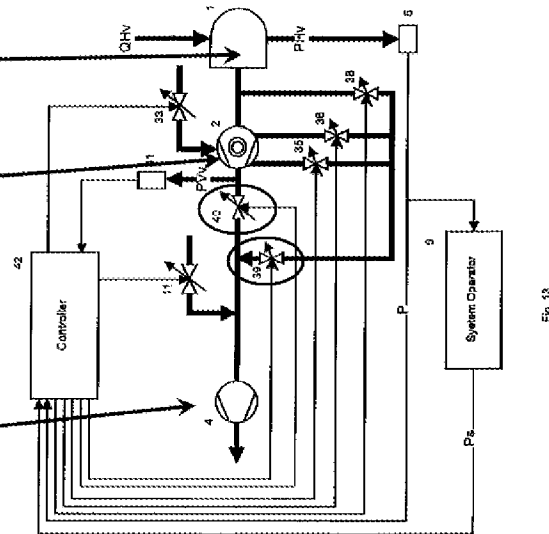


Figure 13 of Beyer et al

4. In Re claim 5, with reference to Figure 2 depicted above, Becker discloses a Leak detector (column 1, line 15) comprising:

- a first high vacuum pump (2) having an entry side which is inherently connected to an inlet of the leak detector (1)
- a second high vacuum pump (4) having an entry side which is connected to a mass spectrometer (5)
- a primary pump (3) having an entry side which is connected to the exit sides (9) and (7) of the first (2) and second (4) high vacuum pumps by conduits (6) and (8)
- there are no throttles or valves between the means connecting the first high vacuum pump (2) and the inlet of the leak detector (1)

5. However, Becker does not disclose a bypass with a first valve and a second valve as claimed.

Art Unit: 3746

6. Nevertheless, with reference to the ninth embodiment shown in Figure 13 depicted above, Beyer et al discloses a vacuum pumping system for controlling the pressure inside chamber (1) comprising:

- a first high vacuum pump (2) having an entry side which is connected to an inlet of chamber (1)
- there are no throttles or valves between the means connecting the first high vacuum pump (2) and the inlet of chamber (1) as depicted and as suggested in Column 1, Lines 34-36: "It is an object of the present invention to decrease the dimensions and, specifically, the footprint of the chamber by ELIMINATING THE THROTTLE VALVE OF THE PRIOR ART system"
- a primary pump (4) having an entry side which is connected to the exit side of the first high vacuum pump (2)
- a bypass connecting the inlet of the chamber to the primary pump as stated in Column 9, Lines 61-62 state: "The control valve 38 is used to bypass the high vacuum pump 2"
- the bypass including a first valve (39)
- wherein a second valve (40) is directly connected to the exit side of the first high vacuum pump (2) and is between the exit side of the first high vacuum pump and the primary pump (4) as depicted
- the second valve (40) is controlled in response to the pressure at the inlet of the chamber as suggested in Column 10, Lines 8-11: "The control valves 35, 36, 38, 39, and 40 are controlled as described above for the control valves 31, 33, 35, 36, and 37."

Art Unit: 3746

In practicing the invention, the CONTROL VALVES can be used in any combination to REGULATE THE PRESSURE IN THE CHAMBER 1”

7. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the leak detector of Becker to include a bypass around the first high vacuum pump with a first valve, and a second valve directly connected to the exit of the first high vacuum pump as taught by Beyer et al for the purpose of bypassing the high vacuum pump completely as stated by Beyer et al in Column 9 Line 67 – Column 10, Line 1: “The combination of control valves 38, 39, and 40 can be used to bypass the high vacuum pump 2 completely”. Column 3 Lines 47-51 of Beyer et al states that the pump (2) is a “pre-vacuum” pump, thereby suggesting that the high vacuum pump be bypassed completely until sufficient vacuum has been achieved.

8. In Re Claims 6 and 7, the claims describe a method of operating a leak detector. Since the claims are directed towards an apparatus (Leak detector), the manner in which it is operated does not distinguish the claimed apparatus from prior art – MPEP 2114. A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim - Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In any case, an alternate rejection for claims 6 and 7 is being made below that addresses the method of operation.

9. Alternatively, Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (US Patent 3,520,176 A) and in view of Beyer et al (US Patent 5,944,049 A) and further in view of Alloca et al (US Patent 4,505,647 A)

10. In Re claim 6, Becker and Beyer et al as applied to Claim 5 discloses all the claimed limitations however, it does not explicitly disclose that the first high vacuum pump is started simultaneously with the opening of the second valve upon opening the first valve.

11. Nevertheless, Alloca et al discloses in Column 2, Lines 64-65: "When pump operation is initiated, the bypass valve (30) is open.." suggesting that the first high vacuum pump (14) is started simultaneously upon opening the first valve (30). The bypass is later closed when the pressure has reduced sufficiently. Column 3, Lines 20-21 of Alloca et al disclose "...a check valve 36 to prevent back pressure..". Since the function of a check valve is to allow flow only in one direction (the direction of pumping of the first high vacuum pump), the second valve (36) is opened simultaneously as the first high vacuum pump (14) is started.

12. It would have been obvious to a person having ordinary skill in the art at the time of the invention to open the first and second valves of Beyer et al simultaneously upon starting/initiating operation of the first high vacuum pump as taught by Alloca et al for the purpose of reducing the load on the primary pump as suggested in the Abstract of Alloca et al: " This reduces the load on the second stage pump and thereby lowers the power requirements of the drive motor"

13. Alternatively, Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (US Patent 3,520,176 A) and in view of Beyer et al (US Patent 5,944,049 A) and further in view of Mugele et al (US Patent 4,225,288 A)

14. In Re claim 7, Becker and Beyer et al as applied to Claim 5 discloses all the claimed limitations however, it does not explicitly disclose that the first high vacuum pump is activated only after the first valve has been opened when the pressure at the inlet has left the viscous flow range or fallen below a limit value.

15. Nevertheless, Mugele et al discloses in Column 3, Lines 13-21: "Normally upon starting up the space 1 will be at atmospheric pressure or almost at atmospheric pressure. Under these circumstances, the side channel ring compressor 4 is bypassed by a bypass line 6. Once a sufficient vacuum has been achieved in the space 1, e.g. a vacuum of 40 Torr, a pressure sensor 8 causes a control valve 7 to shut off the bypass line 6 and through a control signal over a line 16 operates a control device 11 to start up the motor 10 driving the side channel ring compressor 4". This implies that the bypass is operational (first valve open) and the first high vacuum pump remains turned off until sufficient vacuum is reached (left the viscous flow range, "e.g. a vacuum of 40 torr").

16. It would have been obvious to a person having ordinary skill in the art at the time of the invention to turn on the first high vacuum pump of Beyer et al only after the first valve has been opened and sufficient vacuum has been reached (pressure at inlet has left the viscous flow range) as taught by Mugele et al for the purpose of reducing the



Art Unit: 3746

power consumption for the first high vacuum pump as suggested by Mugele et al in

Column 3, Lines 21-23: "This avoids in inadmissibly high power consumption for driving the side channel ring compressor".

17. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (US Patent 3,520,176 A) and in view of Beyer et al (US Patent 5,944,049 A) and further in view of Grosse Bley et al (US Patent 5,585,548 A)

18. In Re claim 8, Becker and Beyer et al as applied to Claim 5 discloses all the claimed limitations however, it does not disclose that the second high vacuum pump further comprises at least one intermediate inlet connected to the exit side of the first high vacuum pump via a valve, said valve being dependently controlled based upon the pressure of the exit side of the first high vacuum pump.

19. Nevertheless, with reference to Figure 1, Grosse Bley et al discloses a leak detection unit (1) comprising:

- a second high vacuum pump (4) with two stages (5) and (6)
- intermediate inlet (13) with valve (14)
- intermediate inlet (18) with valve (19)
- valves (14) and (19) are initially closed, and are "controlled" by opening them once forevacuum pressure ("pressure on the exit side") has been attained (see column 3, lines 29-36)
- a primary pump (9)

Art Unit: 3746

20. It would have been obvious to a person having ordinary skill in the art at the time of the invention to further modify the second high vacuum pump in the Leak detector of Becker to include the intermediate inlets and valves with the second high vacuum pump as taught by Grosse Bley et al for the purpose of increasing the sensitivity of leak detection as taught by Grosse Bley et al as stated in Column 3, line 37.

### ***Response to Arguments***

21. Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DNYANESH KASTURE whose telephone number is (571)270-3928. The examiner can normally be reached on Mon-Fri, 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272 - 7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746

DGK